



AMENDMENTS TO THE CLAIMS

Please cancel Claims 4-7, 16 and 18 without prejudice; amend Claims 12-14, 21, 23, and 24; and add new Claims 25-31 as follows. The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

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1-11. (cancelled)

12. (currently amended) A heat exchanger comprising:

a core portion having a plurality of tubes and a plurality of outer fins made of a first aluminum alloy, the tubes and the outer fins being alternately laminated; and

a tank separately formed from the tubes, the tank into which one end of each of the tubes is inserted, wherein:

each of the tubes is produced by the following method:

uniformly work-hardening a two-layer aluminum alloy plate to form a work-hardened plate, the two-layer aluminum alloy plate having a core made of a second aluminum alloy including manganese and a sacrifice anode layer generally uniformly clad on an entire one side of the core and make of a third aluminum alloy which is electro-chemically base with respect to the second aluminum alloy; and

forming a tube by bending the work-hardened plate so that the sacrifice anode layer is disposed to face a corrosive fluid and the core is disposed to face a non-corrosive fluid; wherein

the core portion further has a brazing material applied on the sacrifice anode layer of the two-layer aluminum alloy plate for brazing the tube and a respective outer fin to each other.

13. (currently amended) The heat exchanger according to claim 12, wherein:
each of the outer fins is corrugated to have a plurality of parallel folds, each of the folds having a flat top through which each of the outer fins is joined to the tubes; and
a the brazing material is applied in a substantially straight line to a joint surface between the flat top and the tubes.

14. (currently amended) The heat exchanger according to claim 12, wherein:
each of the outer fins is corrugated to have a plurality of parallel folds, each of the folds having a flat top through which each of the outer fins is joined to the tubes; and
a the brazing material is applied in stripes to a joint portion between the flat top and each of the tubes.

15. (original) The heat exchanger according to claim 12, wherein an inner fin is disposed inside each of the tubes.

16. (cancelled)

17. (original) The heat exchanger according to claim 12, wherein:

the non-corrosive fluid is a refrigerant; and

the core evaporates the refrigerant.

18-20. (cancelled)

21. (currently amended) A heat exchanger comprising:

a core portion having a plurality of tubes and a plurality of outer fins made of a first aluminum alloy, the tubes and the outer fins being alternately laminated; and

a tank into which one side ends of the tubes are inserted, wherein:

each of the tube tubes is formed from a two-layer aluminum alloy plate that has a core made of a second aluminum alloy including manganese and a sacrifice anode layer generally uniformly clad on an entire one side of the core, the sacrifice anode layer being made of a third aluminum alloy that is electro-chemically base with respect to the second aluminum alloy; and

the two-layer aluminum alloy plate is bent to construct the tube, such that the sacrifice anode layer faces a corrosive fluid and the core faces a non-corrosive fluid;

and

the core portion further has a brazing material applied on the sacrifice anode layer of the two-lawyer aluminum alloy plate for brazing the tube and a respective outer fin to each other.

22. (previously added) The heat exchanger according to Claim 21, wherein the outer fins are corrugated fins having a plurality of folds, each of the folds having a flat top through which each of the outer fins is joined to the tubes.

23. (currently amended) The heat exchanger according to Claim 22, ~~further comprising~~ wherein a the brazing material ~~that~~ is applied in a substantially straight line to a join surface between the flat tops of the outer fins and the tubes.

24. (currently amended) The heat exchanger according to Claim 22, ~~further comprising~~ wherein a the brazing material ~~that~~ is applied in stripes to join portions between the flat tops of the outer fins and the tubes.

25. (new) A heat exchanger comprising:
a core portion having a plurality of tubes and a plurality of outer fins made of a first aluminum alloy, the tubes and the fins being alternately laminated; and
a tank, one end of each tube being inserted into the tank; wherein:
each of the tubes is formed from an aluminum alloy plate having a first layer and a second layer;
the first layer is a core made of a second aluminum alloy including manganese;
the second layer is a sacrifice anode layer generally uniformly clad on an entire one side of the core;

the sacrifice anode layer is made of a third aluminum alloy that is electro-chemically base with respect to the second aluminum alloy;

the aluminum alloy plate is bent to construct the tube such that the sacrifice anode layer faces a corrosive fluid and the core faces a non-corrosive fluid; and

the core portion further has a brazing material on the sacrifice anode layer of the aluminum alloy plate for brazing the tube to a respective outer fin.

26. (new) The heat exchanger according to Claim 25 wherein the aluminum alloy plate has a brazing layer clad on the other side of the core, and the brazing layer is made of a fourth aluminum alloy.

27. (new) The heat exchanger according to claim 26, wherein:

each of the outer fins is corrugated to have a plurality of parallel folds, each of the folds having a flat top through which each of the outer fins is joined to the tubes; and

the brazing material is applied in a substantially straight line to a joint surface between the flat top and the tubes.

28. (new) The heat exchanger according to claim 26, wherein:

each of the outer fins is corrugated to have a plurality of parallel folds, each of the folds having a flat top through which each of the outer fins is joined to the tubes; and

the brazing material is applied in stripes to a joint portion between the flat top and each of the tubes.

29. (new) The heat exchanger according to claim 26, wherein an inner fin is disposed inside each of the tubes.

30. (new) The heat exchanger according to claim 26, wherein:
the non-corrosive fluid is a refrigerant; and
the core evaporates the refrigerant.

31. (new) The heat exchanger according to claim 30, wherein a thickness of each of the tubes is set to be in a range of 0.10-0.35 mm.